



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,384	03/02/2005	Sang-Hea Shim	1455-050676	1698

28289 7590 06/23/2006

THE WEBB LAW FIRM, P.C.
700 KOPPERS BUILDING
436 SEVENTH AVENUE
PITTSBURGH, PA 15219

EXAMINER

CONLEY, SEAN EVERETT

ART UNIT	PAPER NUMBER
----------	--------------

1744

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/506,384

Applicant(s)

SHIM ET AL.

Examiner

Sean E. Conley

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed April 19, 2006 has been received and considered for examination. Claims 1-23 are pending with claims 1-19 withdrawn from consideration as being directed to a non-elected invention.

Claim Objections

2. Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 21 includes the limitation that the stabilized hypochlorite and the bromide ion source is added to a habitat of microorganisms up to 0.1 to 10 ppm total halogen residual. This limitation is found in step (c) of claim 20. Therefore, claim 21 does not further limit the method of claim 20.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

Art Unit: 1744

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 20-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 13, 15 and 18 of U.S. Patent No. 6,478,972 B1 in view of Rutkiewicz (U.S. Patent No. 3,767,586) and Steinhauer (U.S. Patent No. 4,071,463).

Claims 13, 15 and 18 of U.S. Patent No. 6,478,972 discloses all of the limitations of claims 20-23 except for specifically indicating that the stabilized alkali or alkaline earth metal hypochlorite has a pH of at least 11.

Rutkiewicz discloses a process for preparing stable aqueous solutions of N-halo compounds. Specifically, Rutkiewicz discloses that it is known to combine a stabilizer such as sulfamic acid with an alkali or alkaline earth metal hypochlorite. However, these solutions do not produce stabilized concentrated solutions. In order to overcome this deficiency, Rutkiewicz has determined that the pH of the hypochlorite solution must be controlled. Without pH control a concentrated hypochlorite solution will decompose rapidly upon standing (see col. 1, lines 40-55).

Steinhauer discloses a stable aqueous cleaning formulation that comprises sodium hypochlorite. In order to maintain maximum hypochlorite stability the formulation is maintained at a high pH, preferably from about 11.0 to 13.0. This is achieved by including a water soluble alkaline builder or a suitable base such as sodium hydroxide into the composition (see col. 2, lines 35-48). This reference has been relied upon to teach an example of a formulation comprising sodium hypochlorite and having a pH of about 11.0-13.0 in order to maximize stability.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of claims 13, 15 and 18 of U.S. Patent No. 3,767,586. and include a suitable base such as sodium hydroxide in the stabilizer formulation as taught by Steinhauer in order to raise the pH to a level of about 11.0 to 13.0 which further increases the stability of the sodium hypochlorite and also prevents rapid decomposition of the solution as taught by Rutkiewicz.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shim et al. (U.S. Patent No. 6,478,972 B1) in view of Dallmier et al. (U.S. Patent No. 5,942,126) and Steinhauer (U.S. Patent No. 4,071,463).

Regarding claim 20, Shim et al. discloses a method of controlling the growth of microorganisms, comprising the steps of: (a) preparing stabilized alkali or alkaline earth metal hypochlorite by mixing a chlorine oxidant including alkali or alkaline earth metal hypochlorite with a stabilizer selected from the group consisting of acid amide derivatives of carbonic acids, carboxylic acids, amino acids, and sulfuric acids; (b) preparing a bromide ion source; and (c) sequentially or simultaneously introducing the stabilized alkali or alkaline earth metal hypochlorite prepared in step (a) and the bromide ion source prepared in step (b) into a habitat of microorganisms up to 0.1 to 10 ppm total halogen residual (see col. 3, line 61 to col. 4, line 15). Shim et al. fails to specifically teach the step of preparing a stabilized alkaline earth metal hypochlorite having a pH of at least 11. Shim et al. does however disclose that sodium hypochlorite (NaOCl), which is an alkali or alkaline earth metal hypochlorite, is an example of a hypochlorite widely used to control microbial fouling in various types of aqueous systems including cooling water towers and swimming pools.

Dallmier et al. discloses several methods well known in the art that are used to stabilize NaOCl. One way to stabilize NaOCl is to include a stabilizer such as an acid as taught by Shim et al. above and also disclosed by Dallmier et al (see col. 1, lines 35-37). Furthermore, Dallmier et al. discloses that the process has been further improved upon by controlling the pH of the solution which further increases the stability of concentrated solutions of sodium hypochlorite (see col. 1, lines 27-40).

Steinhauer discloses a stable aqueous cleaning formulation that comprises sodium hypochlorite. In order to maintain maximum hypochlorite stability the

formulation is maintained at a high pH, preferably from about 11.0 to 13.0. This is achieved by including a water soluble alkaline builder or a suitable base such as sodium hydroxide into the composition (see col. 2, lines 35-48). This reference has been relied upon to teach an example of a formulation comprising sodium hypochlorite and having a pH of about 11.0-13.0 in order to maximize stability.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Shim et al. and include a suitable base such as sodium hydroxide in the stabilizer formulation as taught by Steinhauer in order to raise the pH to a level of about 11.0 to 13.0 which increases the stability of the sodium hydroxide to a maximum level as taught by Dallmier et al.

Regarding claims 21 and 22, Shim et al. discloses that the stabilized hypochlorite and the bromide ion source is added to a habitat of microorganisms up to 0.1 to 10 ppm total halogen residual (see col. 4, lines 5-15).

Regarding claim 23, Shim et al. discloses that the water system is selected from the group consisting of swimming pools, spas, cooling water towers, bleaching agents, recycling water systems, and water slides (see col. 8, lines 45-53).

5. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shim et al. (U.S. Patent No. 6,478,972 B1) in view of Rutkiewicz (U.S. Patent No. 3,767,586) and Steinhauer (U.S. Patent No. 4,071,463).

Regarding claim 20, Shim et al. discloses a method of controlling the growth of microorganisms, comprising the steps of: (a) preparing stabilized alkali or alkaline earth metal hypochlorite by mixing a chlorine oxidant including alkali or alkaline earth metal hypochlorite with a stabilizer selected from the group consisting of acid amide derivatives of carbonic acids, carboxylic acids, amino acids, and sulfuric acids; (b) preparing a bromide ion source; and (c) sequentially or simultaneously introducing the stabilized alkali or alkaline earth metal hypochlorite prepared in step (a) and the bromide ion source prepared in step (b) into a habitat of microorganisms up to 0.1 to 10 ppm total halogen residual (see col. 3, line 61 to col. 4, line 15). Shim et al. fails to specifically teach the step of preparing a stabilized alkaline earth metal hypochlorite having a pH of at least 11. Shim et al. does however disclose that sodium hypochlorite (NaOCl), which is an alkali or alkaline earth metal hypochlorite, is an example of a hypochlorite widely used to control microbial fouling in various types of aqueous systems including cooling water towers and swimming pools.

Rutkiewicz discloses a process for preparing stable aqueous solutions of N-halo compounds. Specifically, Rutkiewicz discloses that it is known to combine a stabilizer such as sulfamic acid with an alkali or alkaline earth metal hypochlorite. However, these solutions do not produce stabilized concentrated solutions. In order to overcome this deficiency, Rutkiewicz has determined that the pH of the hypochlorite solution must be controlled. Without pH control a concentrated hypochlorite solution will decompose rapidly upon standing (see col. 1, lines 40-55).

Steinhauer discloses a stable aqueous cleaning formulation that comprises sodium hypochlorite. In order to maintain maximum hypochlorite stability the formulation is maintained at a high pH, preferably from about 11.0 to 13.0. This is achieved by including a water soluble alkaline builder or a suitable base such as sodium hydroxide into the composition (see col. 2, lines 35-48). This reference has been relied upon to teach an example of a formulation comprising sodium hypochlorite and having a pH of about 11.0-13.0 in order to maximize stability.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Shim et al. and include a suitable base such as sodium hydroxide in the stabilizer formulation as taught by Steinhauer in order to raise the pH to a level of about 11.0 to 13.0 which further increases the stability of the sodium hypochlorite and also prevents rapid decomposition of the solution as taught by Rutkiewicz.

Regarding claims 21 and 22, Shim et al. discloses that the stabilized hypochlorite and the bromide ion source is added to a habitat of microorganisms up to 0.1 to 10 ppm total halogen residual (see col. 4, lines 5-15).

Regarding claim 23, Shim et al. discloses that the water system is selected from the group consisting of swimming pools, spas, cooling water towers, bleaching agents, recycling water systems, and water slides (see col. 8, lines 45-53).

Response to Arguments

6. Applicant's arguments, see pages 2-3, filed April 19, 2006, with respect to the rejection(s) of claim(s) 20-23 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Shim (6,478,972), Rutkiewicz (3,767,586), Steinhauer (4,071,463), and Dallmeyer et al. (5,942,126).

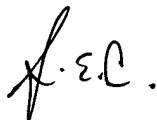
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Conley whose telephone number is 571-272-8414. The examiner can normally be reached on M-F 8:30-5:00.

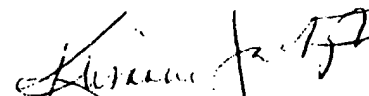
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEC



June 16, 2006



KRISANNE JASTRZAB
PRIMARY EXAMINER